

## **Is the Speed of Light Relative to the Size of the Observer? v2.2**

A thought problem which materialized in my head on 12/28/05

Premise: Exceeding the speed of light is dependent on the size of the observer. (Or, the speed of light is dependent on the size of the observer, or the speed of light is relative to the size of the observer, or there are different speeds of light dependent on the size of the observer, or the speed of light has nothing to do with the size of the observer, or...)

I am going to use the game of baseball to help illustrate my premise(s). If you hate sports as much as I do, don't fret. This really has (almost) nothing to do with baseball.

Assume that you are at a baseball game. The pitcher's mound, rounded off, is 60 feet from home plate. The pitcher is 6 feet tall. He throws the ball at 100 miles an hour. You know this because you have a radar gun, or whatever, which measures the speed of the ball.

Now assume that you are transported to a planet that is twice as big as Earth. You find yourself at a baseball game. The pitcher is 12 feet tall, and the pitcher's mound is 120 feet from home plate. Everything is twice as big / twice as far, as it is on Earth.

Everything is twice that of Earth. The pitcher throws the ball at 100 miles an hour. Well, that's 100 of their miles per hour. One of their miles is two of our miles. Logic and the radar gun tells us that the pitched ball was traveling at 200 of our [Earth] miles an hour.

To cut to the chase, if we keep increasing the size of the planet, eventually we find ourselves at a baseball game on a planet where a baseball pitched at 100 of their miles per hour would be equal to the (our?) speed of light, and if the ball was pitched at 100+ of their miles per hour, it would exceed the (our?) speed of light.

So, we have discovered that at a certain size, a pitcher couldn't throw a baseball faster than 100 (of their) miles per hour, or it would be going faster than the speed of light. And then there is the maximum speed of 100 of their miles per hour of the batted ball. And of a bullet's speed. And of a jet plane. And of the winds of a tornado.

On our planet, we have sub sub sub atomic particles. Assume a person who inhabited a universe made up of "stuff" in that sub sub sub atomic world found himself transported to one of our baseball games, with a radar gun. That person measures the speed of a pitched ball with an instrument set for their distances and speeds. For this example, the ball is traveling at 101 of our miles per hour, but the very very very tiny person would get a reading faster than the (or his?) speed of light.

Or whatever. I admit that I do not understand the implication(s) of the above. I also admit that this thought problem has me confused. Is it possible for there to be different speeds of light? Ours and theirs? Or is it that really really really big people would inhabit a world where many things moved at the speed of light. And an observer whose height was half way between ours and the really really really big peoples' would observe the ball traveling at the speed of light at a different speed of the pitched ball than we do.

Feel free to unconfuse me. Norman K. Breslow [nbreslow@aol.com](mailto:nbreslow@aol.com)